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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,913	08/29/2003	Eric Tan Swee Seng	108298733US	9569

25096 7590 04/11/2007  
PERKINS COIE LLP  
PATENT-SEA  
P.O. BOX 1247  
SEATTLE, WA 98111-1247

EXAMINER
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WILLIAMS, ALEXANDER O

ART UNIT	PAPER NUMBER
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2826

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/651,913	<b>Applicant(s)</b> SENG ET AL.	
	<b>Examiner</b> Alexander O. Williams	<b>Art Unit</b> 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 46-52 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11 and 46-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

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Serial Number: 10/651913    Attorney's Docket #: 108298733US  
Filing Date: 8/29/2003;

Applicant: Seng et al.

Examiner: Alexander Williams

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/22/07 has been entered.

Applicant's Amendment filed 1/22/07 to the election of the species of figures 1A-5A (claims 1 to 7, 9 and 11) filed 9/9/05, has been acknowledged.

This application contains claims 8 and 10 drawn to an invention non-elected without traverse.

Claims 12-45 have been cancelled.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 to 7, 9 and 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by Kuan et al. (U.S. Patent # 6,784,525).

1. Kuan et al. (figures 1 to 8) specifically figure 4E show a microfeature device package system **10**, comprising: a microfeature device **12**;

a plurality of device contacts **22** electrically coupled to structures within the microfeature device; a conductive structure **24** electrically connected to at least one of the plurality of device contacts, the conductive structure having a plurality of first (**bottom of 28**) and second (**top of 26**) package contacts accessible for electrical coupling to at least one device external (**see figure 7**) to the package, the first package contacts being accessible from a first

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direction for coupling and the second package contacts being configured to receive solder balls **16** and being accessible from a second direction for coupling, the second direction being opposite the first direction; an encapsulant **14** disposed adjacent to the microfeature device and the conductive structure, the encapsulant having apertures **62** with aperture walls aligned with the second package contacts to contain solder balls carried by the second package contacts, the encapsulant being positioned against the conductive structure proximate to the first package contacts; and individual volumes of solder positioned at individual first package contacts.

2. The system of claim 1, Kuan et al. show wherein the conductive structure includes a leadframe having a plurality of elongated leadfingers **26**, wherein the first package contacts includes generally flat, elongated surfaces of the leadfingers, and wherein the second package contacts include end surfaces of the leadfingers.
3. The system of claim 1, Kuan et al. show wherein the microfeature device has an at least generally planar first surface facing in the first direction and an at least generally planar second surface facing in the second direction, and wherein the plurality of device contacts are positioned at least proximate to the second surface.
4. The system of claim 1, Kuan et al. show wherein the first package contacts are arranged in a first pattern, and wherein the second package contacts are arranged in a second pattern different than the first pattern.
5. The system of claim 1, Kuan et al. show wherein the first package contacts **160** are arranged adjacent to a periphery of the package, and wherein the second package contacts are arranged in an array with at least some of the second package contacts spaced apart from the periphery of the package.
6. The system of claim 1, Kuan et al. further comprising solder balls **16** disposed on the second package contacts.

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7. The system of claim 1, Kuan et al. show wherein the conductive structure **24** includes a leadframe attached to the microfeature device, and wherein the leadframe includes a plurality of elongated leadfingers, with each leadfinger having a first end portion positioned to make electrical contact a first type of external device, each leadfinger further having a second end portion wirebonded **36** to at least one of the device contacts, each leadfinger still further having an intermediate portion between the first and second end portions, the intermediate portion carrying a solder ball **16** to make electrical contact with a second type of external device.

9. The system of claim 1, Kuan et al. further comprising the device external to the package, and wherein the device external to the package includes a printed circuit board (inherent) having circuitry electrically coupled to of the first package contacts or the second package contacts (see figure 7).

11. The system of claim 1, Kuan et al. show wherein the microfeature device **12** includes a memory chip.

Claims 1 to 7, 9, 11 and 46 to 52 are rejected under 35 U.S.C. § 102(e) as being anticipated by Huang et al. (U.S. Patent Application Publication # 2002/0046854 A1).

1. Huang et al. (figures 1 to 14) specifically figures 9 and 10 show a microfeature device package system **5"**, comprising: a microfeature device **53'**; a plurality of device contacts (**inherent**) electrically coupled to structures within the microfeature device; a conductive structure **52"** electrically connected to at least one of the plurality of device contacts, the conductive structure having a plurality of first (**bottom of 522"**) and second (**top of 52'"**) package contacts accessible for electrical coupling to at least one device external (**see figure 10**) to the

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ckage, the first package contacts being accessible from a first direction for coupling and the second package contacts being configured to receive solder balls **16** and being accessible from a second direction for coupling, the second direction being opposite the first direction; an encapsulant **55**, **514**, **51** disposed adjacent to the microfeature device and the conductive structure, the encapsulant having apertures **511** with aperture walls aligned with the second package contacts to contain solder balls carried by the second package contacts, the encapsulant being positioned against the conductive structure proximate to the first package contacts; and individual volumes of solder positioned at individual first package contacts.

2. The system of claim 1, Huang et al. show wherein the conductive structure includes a leadframe having a plurality of elongated leadfingers **522**", wherein the first package contacts includes generally flat, elongated surfaces of the leadfingers, and wherein the second package contacts include end surfaces of the leadfingers.

3. The system of claim 1, Huang et al. show wherein the microfeature device has an at least generally planar first surface facing in the first direction and an at least generally planar second surface facing in the second direction, and wherein the plurality of device contacts are positioned at least proximate to the second surface.

4. The system of claim 1, Huang et al. show wherein the first package contacts are arranged in a first pattern, and wherein the second package contacts are arranged in a second pattern different than the first pattern.

5. The system of claim 1, Huang et al. show wherein the first package contacts **160** are arranged adjacent to a periphery of the package, and wherein the second package contacts are arranged in an array with at least some of the second package contacts spaced apart from the periphery of the package.

6. The system of claim 1, Huang et al. further comprising solder balls **56** disposed on the second package contacts.

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7. The system of claim 1, Huang et al. show wherein the conductive structure **52**" includes a leadframe attached to the microfeature device, and wherein the leadframe includes a plurality of elongated leadfingers, with each leadfinger having a first end portion positioned to make electrical contact a first type of external device, each leadfinger further having a second end portion wirebonded **54** to at least one of the device contacts, each leadfinger still further having an intermediate portion between the first and second end portions, the intermediate portion carrying a solder ball **56** to make electrical contact with a second type of external device.

9. The system of claim 1, Huang et al. further comprising the device external to the package, and wherein the device external to the package includes a printed circuit board (inherent) having circuitry electrically coupled to of the first package contacts or the second package contacts (see figure 10).

11. The system of claim 1, Huang et al. show wherein the microfeature device **53** includes a memory chip.

46. Huang et al. (figures 1 to 14) specifically figures 9 and 10 show a microfeature device package system **5**", comprising: a microfeature device **53** having a plurality of device contacts (**inherent**); a conductive structure **52**" electrically connected to at least one of the plurality of device contacts, the conductive structure having a plurality of first package contacts (**bottom of 52**") having contact surfaces accessible for electrical coupling to at least one device external to the package, the first package contacts being accessible from a first direction and the second package contacts being accessible from a second direction opposite the first direction; and an encapsulant **55**", **514**, **51** disposed adjacent to the microfeature device and the conductive structure, the

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capsulant having apertures aligned with the second package contacts and having aperture walls extending outwardly from the contact surfaces of the second package contacts.

47. The system of claim 46, Huang et al. show wherein the conductive structure includes leadframe having a plurality of elongated leadfingers, and wherein the first package contacts includes generally flat, elongated surface of the leadfingers, and wherein the second package contacts include end surfaces of the leadfingers.

48. The system of claim 46, Huang et al. show wherein the first package contacts are arranged in a first pattern, and wherein the second package contacts are arranged in a second pattern different than the first pattern.

49. The system of claim 46, Huang et al. further comprises solder balls disposed in the apertures of the encapsulant and in contact with the contact surfaces of the second package contacts.

50. Huang et al. (figures 1 to 14) specifically figures 9 and 10 show a microfeature device package system **5"**, comprising: a microfeature device **53** having a plurality of device contacts (**inherent**); a conductive structure **52"** electrically connected to at least one of the plurality of device contacts, the conductive structure having a plurality of first package contacts (**bottom of 52"**) and second package contacts with individual first and second package contacts having contact surfaces accessible for electrical coupling to at least one device external to the package, the first package contacts being accessible from a first direction and the second package contacts being accessible from a second direction opposite the first direction; and an encapsulant **55"**, **514**, **51** disposed adjacent to the microfeature device and the conductive structure, and wherein the package system includes a plurality of openings **511** aligned with the second package contacts,

51. The system of claim 50, Huang et al. show wherein the conductive structure includes a leadframe **52"** having a plurality of elongated leadfingers, and wherein the first package contacts includes generally flat, elongated surfaces of the leadfingers, and wherein the second package contacts include end surfaces of the leadfingers.

51. The system of claim 50, Huang et al. show wherein the first package contacts are arranged in a first pattern, and wherein the second package contacts are arranged in a second pattern different than the first pattern.

52. The system of claim 50, Huang et al. show further comprises solder balls disposed in the openings and in contact with the second package contacts.

## Response

Applicant's arguments filed 1/22/07 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

The listed references are cited as of interest to this application, but not applied at this time.

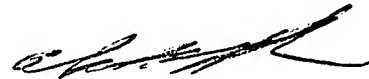
Field of Search	Date
U.S. Class and subclass: 257/E23.004,23.068,25.023,684,666,673,698,691,690,692, ,693,696,775,776,784,786,787,796,e23.042,e25.023,e25. 023,e23.124,e23.047,e23.039; 174/52.1,528,538	4/2/06 9/14/06 3/30/07
Other Documentation: foreign patents and literature in 257/ E23.004,23.068,25.023,684,666,673,698,691,690,692,693, ,696,775,776,784,786,787,796,e23.042,e25.023,e25.023, e23.124,e23.047,e23.039; 174/52.1,528,538	4/2/06 9/14/06 3/30/07
Electronic data base(s): U.S. Patents EAST	4/2/06 9/14/06 3/30/07

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O. Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272 1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexander O Williams  
Primary Examiner  
Art Unit 2826

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